

## Syphilis

Syphilis, a genital ulcerative disease, facilitates the transmission of HIV and may be important in contributing to HIV transmission in those parts of the country, such as the South, where rates of both infections are high. Untreated early syphilis during pregnancy results in perinatal death in up to 40% of cases and, if acquired during the four years preceding pregnancy, may lead to infection of the fetus in over 70% of cases.<sup>1</sup>

The rate of primary and secondary (P&S) syphilis reported in the United States is the lowest since reporting began in 1941. This unprecedented low rate and the concentration of the majority of syphilis cases in a small number of geographic areas have led to the development of the National Plan to Eliminate Syphilis from the United States, which was announced by Surgeon General David Satcher in October 1999.<sup>2</sup> Collaboration with diverse organizations, public health professionals, the private medical community, and other partners working in STD and HIV is essential for the success of this effort.<sup>3</sup>

The rate of P&S syphilis in the United States declined by 89.2% from 1990 through 2000. Nevertheless, syphilis remains an important problem in the South and in some urban areas in other regions of the country. Recently, outbreaks of syphilis among men who have sex with men (MSM) have been reported, possibly reflecting an increase in risky behavior in this population associated with the availability of highly active antiretroviral therapy for HIV infection.<sup>4,5</sup>

- In 2000, P&S syphilis cases reported to CDC declined to 5,979 from 6,617 in 1999, a decline of 9.6%. The number of P&S syphilis cases reported in 2000 is the lowest yearly number of cases ever reported (Table 1). The reported rate of P&S syphilis in the United States in 2000 (2.2 cases per 100,000 persons) was slightly below the rate reported in 1999 (2.4 cases per 100,000), although it is greater than the Healthy People 2010 (HP2010) objective of 0.2 case per 100,000 persons (Figure 21, Table 1).<sup>6</sup>
- Since 1990, the rate of early latent syphilis has exceeded the rate of P&S syphilis. There were approximately 0.9 case per 100,000 persons of early latent syphilis for every reported case of P&S syphilis in the five years preceding 1990 and 1.6 reported cases of early latent syphilis for every reported case of P&S syphilis in 2000 (Table 1).
- Since 1993, the rate of late and late latent syphilis has exceeded the rate of P&S syphilis. There were approximately 0.6 case per 100,000 persons of late and late latent syphilis for every reported case of P&S syphilis in the five years preceding 1993 and 2.6 reported cases of late and late latent syphilis for every reported case of P&S syphilis in 2000 (Table 1).
- In 2000, P&S syphilis rates in 14 states were less than or equal to the HP2010 national objective of 0.2 case per 100,000 persons (Figure 22, Table 23). Fifteen states and two outlying areas reported five or fewer cases of P&S syphilis in 2000 (Table 25).

- In 2000, 2,520 (80.3%) of 3,139 counties in the United States reported no cases of P&S syphilis compared with 2,473 (78.8%) counties reporting no cases in 1999. Of 619 counties reporting at least one case of P&S syphilis in 2000, 24 (3.9%) reported rates at or below the HP2010 objective of 0.2 case per 100,000 persons. Rates of P&S syphilis were above the HP2010 objective for 595 counties in 2000 (Figure 23). These 595 counties (18.9% of the total number of counties in the U.S.) accounted for more than 99.5% of the total P&S syphilis cases reported in 2000.
- In 2000, 2,544 (81.0%) of the 3,139 United States counties reported P&S syphilis rates equal to or less than the HP2010 objective of 0.2 case per 100,000 persons.
- In 2000, the largest numbers of cases of P&S syphilis were reported from 21 counties and the city of Baltimore, MD (Table 24). These 22 areas account for half of the total number of P&S syphilis cases that were reported in the United States in 2000.
- In 2000, the reported rate of P&S syphilis among men (2.7 cases per 100,000 males) was 1.5 times greater than the rate among women (1.8 cases per 100,000 females). The overall male to female rate ratio has risen steadily since 1994 when it was 1.1 (Figure 26).
- The P&S syphilis rate for 2000 in the South (3.8 cases per 100,000 persons) was higher than the rate reported in any other region of the country. The 2000 reported rates in all regions were greater than the HP2010 objective of 0.2 case per 100,000 persons (Figure 24, Table 25).
- Reported rates and case counts for P&S syphilis were calculated within each of the four geographic regions of the United States (Northeast, Midwest, South, and West) and for each of four categories representing the level of urbanization (urban, peri-urban, peri-rural, rural) (see Figure 25 and the **Appendix** for definitions of the categories). Reported P&S syphilis rates in the South were higher than the other regions of the country for all urbanization categories. Of the 5,979 cases of P&S syphilis reported at the county level in 2000, 62.0% occurred in the South.
- The overall rate of P&S syphilis reported in 2000 for selected large U.S. cities with populations of 200,000 persons or more (4.6 per 100,000 persons) was slightly less than the rate reported for these cities in 1999 (5.0 per 100,000 persons) (Table 29). However, rates exceeded the HP2010 objective of 0.2 case per 100,000 persons in 57 (89.0%) of 64 large cities in the United States and outlying areas for which data were available (Table 28).
- In 2000, the rate of P&S syphilis reported in African-Americans (12.8 cases per 100,000 persons) was 21 times greater than the rate reported in whites (0.6 case per 100,000 persons). However, this differential was substantially less than that in 1996, when the rate of P&S syphilis among African-Americans was 50 times greater than the rate reported among whites (Table 32B).
- Between 1996 and 1999, the rates of P&S syphilis within racial and ethnic groups generally declined. Group-specific rates remained relatively constant between 1999 and 2000, with the exception of the rate among African-Americans, which decreased from 15.0 to 12.8 cases per 100,000 persons during this period (Figure 27, Table 32B).

- Between 1999 and 2000, the overall rate of congenital syphilis decreased by 7.6% in the United States, from 14.5 to 13.4 cases per 100,000 live births (Figure 29, Table 37). In addition, among the 21 states and outlying areas with five or more reported cases of congenital syphilis in 2000, 10 had rates that decreased since 1999. Three of these states and Puerto Rico had rate decreases of 30% or more between 1999 and 2000 (Table 39).
- The continuing decrease in the rate of congenital syphilis (Figure 30) likely reflects the substantial reduction in the rate of P&S syphilis among women that has occurred in the last decade (Figure 29).<sup>7</sup> During the period from 1991 through 2000, the average yearly percentage decrease in the congenital syphilis rate was 22% (Table 37). The average yearly percentage decrease in the rate of P&S syphilis reported among women for the years 1991 through 2000 was 21.0%.
- In 2000, 27 states and one outlying area had reported rates of congenital syphilis that exceeded the HP2010 objective of 1.0 case per 100,000 live births (Table 38).
- Thirty-three (51.6%) of the 64 selected cities with populations of 200,000 persons or more had congenital syphilis rates greater than the HP2010 objective of 1.0 case per 100,000 live births (Table 40). All of these cities had reported rates that were more than six times the HP2010 objective.<sup>7</sup>
- Additional information on syphilis and congenital syphilis can be found in the **Special Focus Profiles** section.

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<sup>1</sup>Ingraham NR. The value of penicillin alone in the prevention and treatment of congenital syphilis. *Acta Derm Venereol* 31 (suppl 24): 60, 1951.

<sup>2</sup>Division of STD Prevention. *The National Plan to Eliminate Syphilis from the United States*. National Center for HIV, STD, and TB Prevention, Centers for Disease Control and Prevention, 1999.

<sup>3</sup>Centers for Disease Control and Prevention. Primary and secondary syphilis – United States, 1999. *MMWR* 2000;50:113-117.

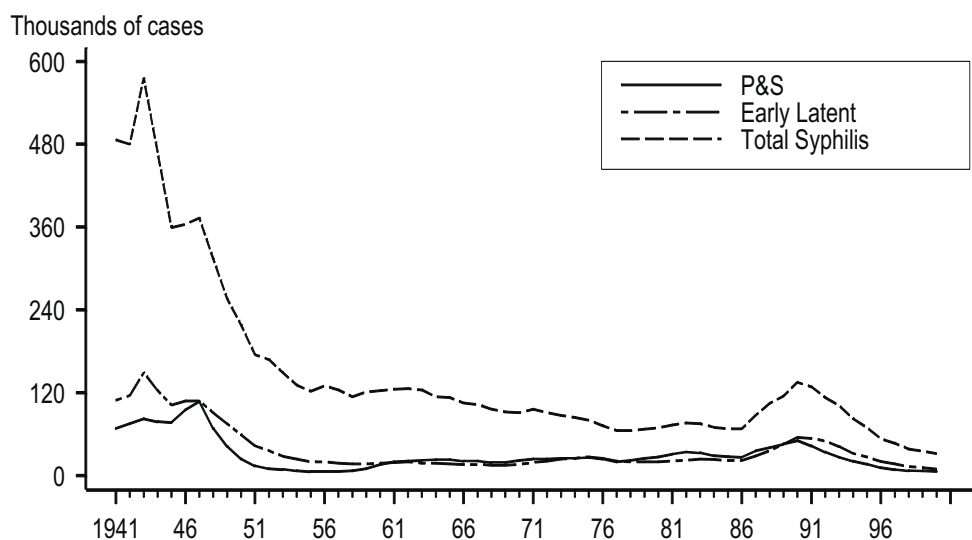
<sup>4</sup>Centers for Disease Control and Prevention. Resurgent bacterial sexually transmitted disease among men who have sex with men – King County, Washington, 1997-1999. *MMWR* 1999; 48:773-777.

<sup>5</sup>Centers for Disease Control and Prevention. Outbreak of syphilis among men who have sex with men - Southern California, 2000. *MMWR* 2001; 50(7): 117-20.

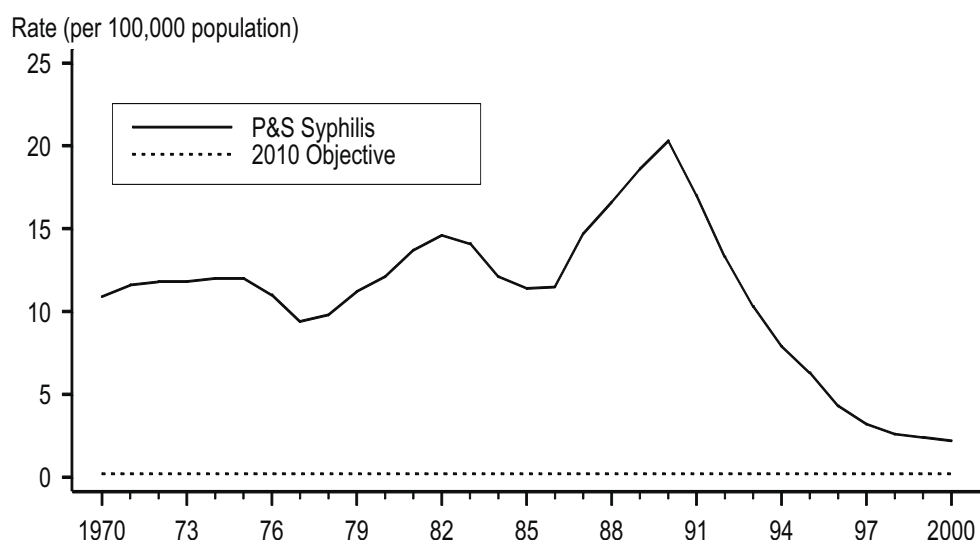
<sup>6</sup>U.S. Department of Health and Human Services. *Healthy People 2010*. 2<sup>nd</sup> ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: U.S. Government Printing Office, November 2000.

<sup>7</sup>Centers for Disease Control and Prevention. Congenital Syphilis - United States, 2000. *MMWR* 2001;50(27):573-77.

**Figure 20. Syphilis — Reported cases by stage of illness: United States, 1941–2000**

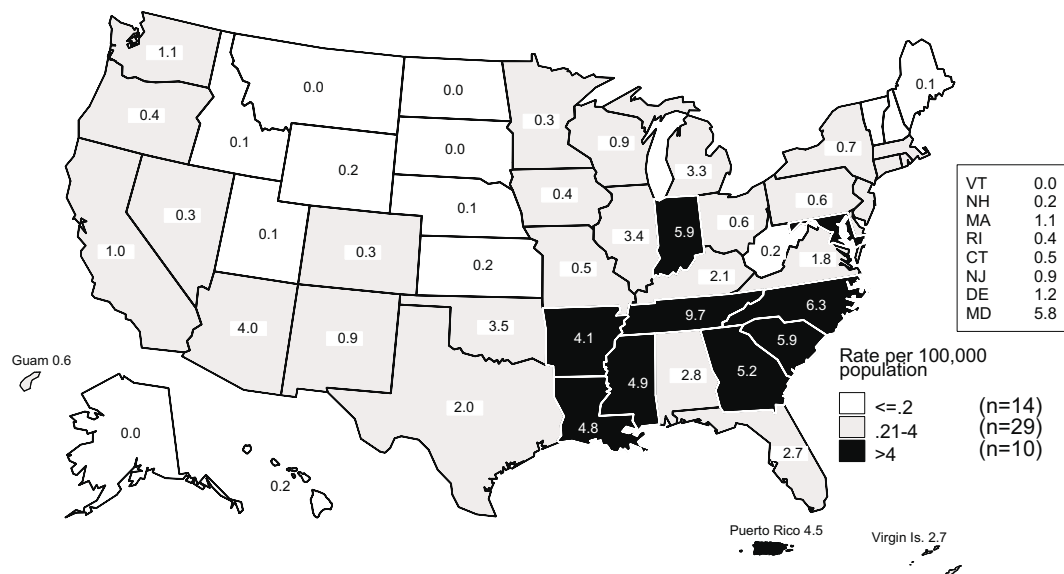


**Figure 21. Primary and secondary syphilis — Reported rates: United States, 1970–2000 and the Healthy People year 2010 objective**



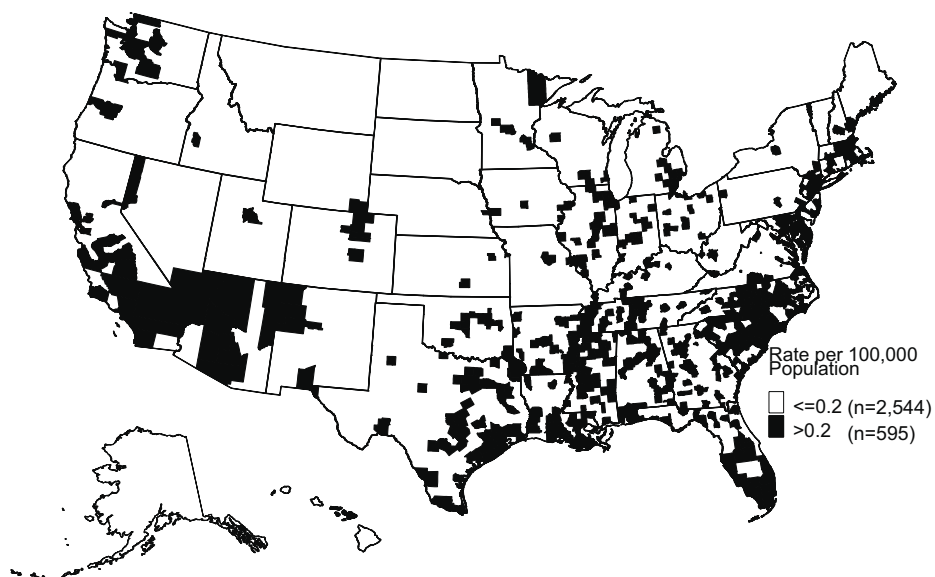
Note: The Healthy People 2010 (HP2010) objective for primary and secondary syphilis is 0.2 case per 100,000 population.

**Figure 22. Primary and secondary syphilis — Rates by state: United States and outlying areas, 2000**

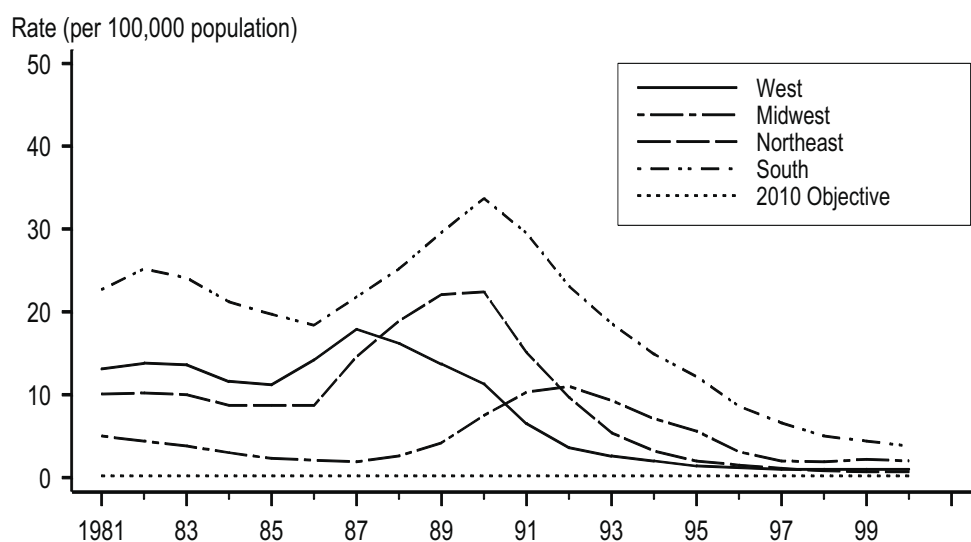


Note: The total rate of primary and secondary syphilis for the United States and outlying areas (including Guam, Puerto Rico and Virgin Islands) was 2.2 per 100,000 population. The Healthy People year 2010 objective is 0.2 per 100,000 population.

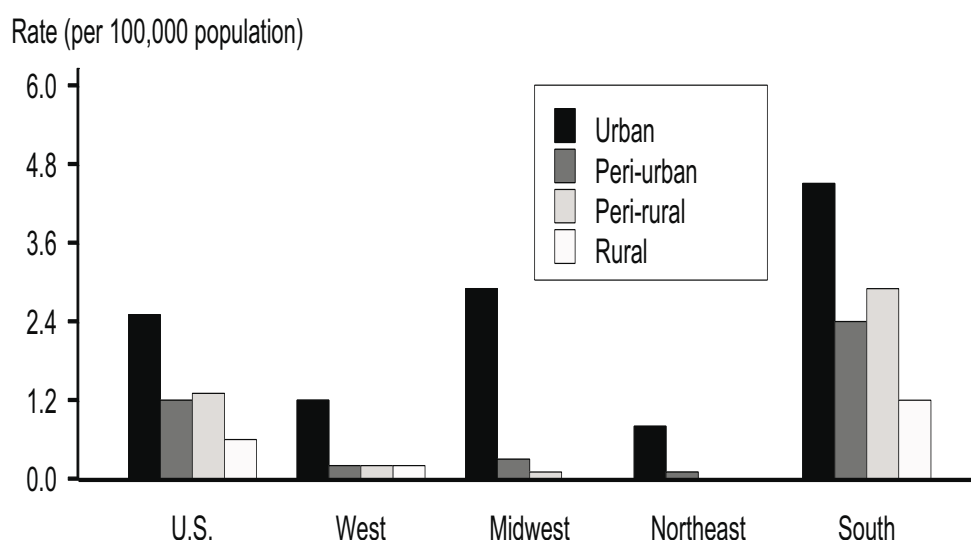
**Figure 23. Primary and secondary syphilis — Counties with rates above and counties with rates below the Healthy People year 2010 objective: United States, 2000**



**Figure 24. Primary and secondary syphilis — Rates by region: United States, 1981–2000 and the Healthy People year 2010 objective**

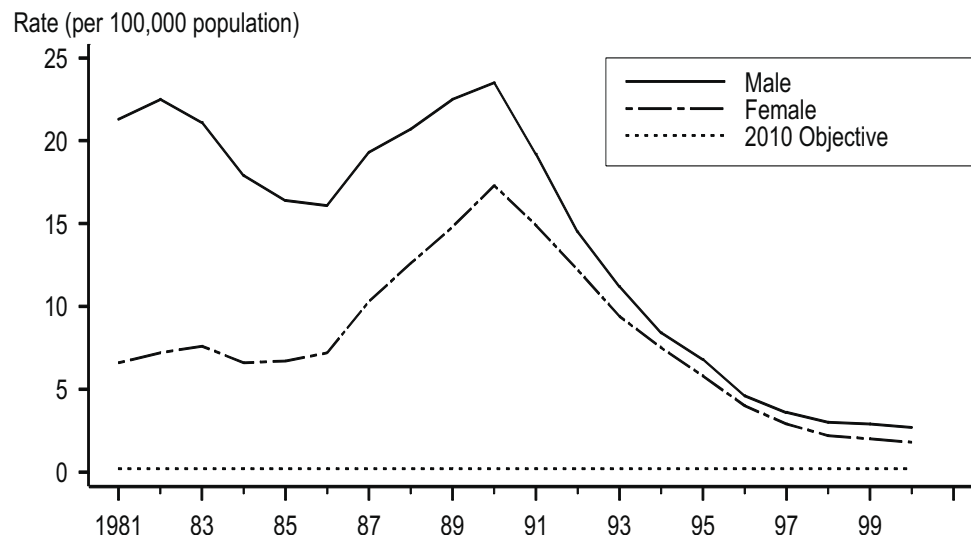


**Figure 25. Primary and secondary syphilis — Rates by urban-rural category and geographic region, 2000**

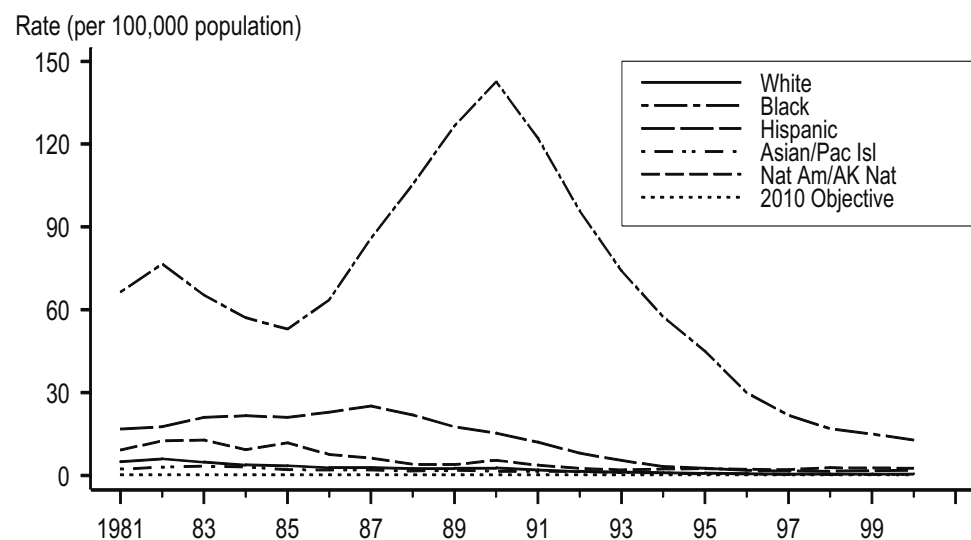


Note: See Appendix for definitions and source of urban-to-rural categories.

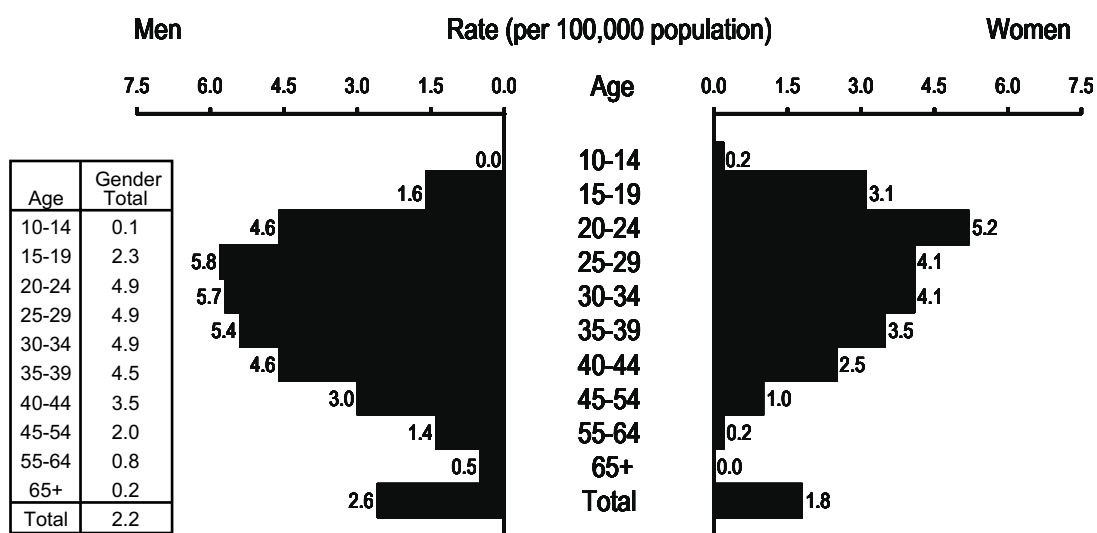
**Figure 26. Primary and secondary syphilis — Rates by gender: United States, 1981–2000 and the Healthy People year 2010 objective**



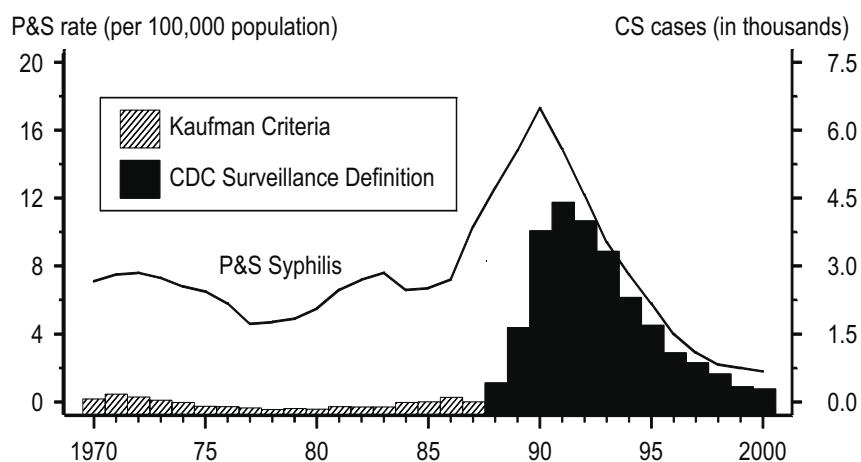
**Figure 27. Primary and secondary syphilis — Rates by race and ethnicity: United States, 1981–2000 and the Healthy People year 2010 objective**



**Figure 28. Primary and secondary syphilis — Age- and gender-specific rates: United States, 2000**



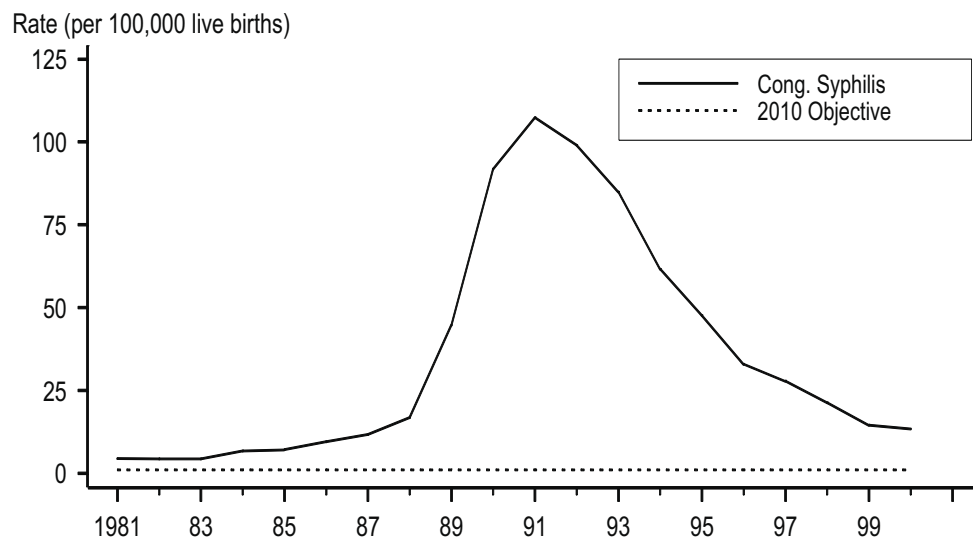
**Figure 29. Congenital syphilis — Reported cases for infants <1 year of age and rates of primary and secondary syphilis among women: United States, 1970–2000**



Note: The surveillance case definition for congenital syphilis changed in 1988 (see Appendix). Case counts for congenital syphilis shown in this graph correspond to those listed in Table 37.



**Figure 30. Congenital syphilis — Rates for infants <1 year of age: United States, 1981–2000 and the Healthy People year 2010 objective**



Note: The Healthy People 2010 (HP2010) objective for primary and secondary syphilis is 0.2 case per 100,000 population. The surveillance case definition for congenital syphilis changed in 1988 (see Appendix).